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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,173	11/14/2003	John Erik Lindholm	NVDA/P000844	9811

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EXAMINER	
TUNG, KEE M	

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,173	LINDHOLM, JOHN ERIK	
	Examiner	Art Unit	
	Kee M Tung	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 5-13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, and 36-41 of copending Application No. 10/609,967. Although the conflicting claims are not identical, they are not patentably distinct from each other because the present application claimed less than the copending application, for example, the difference between claim 6 of present application and claim 36 of the copending application is that the present application does not claimed "determining a thread to process the sample is available for assignment to the sample".

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al (6,630,935 hereinafter "Taylor") in view of Rentschler et al (5,969,726 hereinafter "Rentschler").

Taylor teaches a graphics processor (title) for multithreaded execution (Figs. 1-4 and col. 9, line 11 and col. 10, lines 20-21) of program instructions associated with threads to simultaneously process (fig. 4 shows a plurality of threads 114, 116, 118, 120, 126, 128 and 130 operate in parallel/simultaneous in pipeline processing) at least two sample types (vertex, primitive, and pixel, col. 5, lines 10-23; col. 6, lines 1-15; col. 26, lines 3-64 and col. 28, lines 1-9) comprising at least one multithreaded processing unit (10) that includes a thread control unit (Fig. 1, 18-24 and Fig. 4, 115-121 and 127-133) including an output buffer (Fig. 11, 650) storing data at one or more output pixel positions as a portion of thread state data; a thread storage resource (Fig. 12 and col. 19, lines 7-59) configured to store thread state data (col. 6, lines 60-67) for each of the threads to process the at least two sample types. Taylor further teaches determining how many of the threads are available for allocation among the sample types and determining how many of the threads are assignable to each of the sample types (Fig. 4, vertex distribution block 112 distributes input vertex data to one of the transform

threads 114-118 based on load balance and similarly for clip thread 120 to pass to AP 126-130); passing a priority check based on an allocation priority for the sample type prior to assigning the sample to the thread (Figs. 4-6, for example, arbitration module 14 can pass any of the threads of 114-130 to computation engine 12 based on the priority and threads 114-118 process in vertex data and threads 126-130 in primitives and Figs. 5 and 6 show different clock cycles/timing can allowed different threads to be process). However, Taylor fails to explicitly teach or suggest "wherein a number of locations in the thread storage resource ... global state value". This is what Rentschler teaches (Fig. 4 and col. 13, line 30 to col. 14, line 47). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to combine the teachings of Rentschler into the system of Taylor in order to efficiently process primitive data while avoiding providing the graphics processor with an excessive amount of data than necessary to render the primitives as taught by Rentschler (abstract). Therefore, at least claims 1-20 would have been obvious.

Response to Arguments

5. Applicant's arguments filed 4/11/05 have been fully considered but they are not persuasive.

The 35 USC 103 rejection has been modified in order to fully considered applicant's amendment.

First, applicant argues that Taylor fails to teach that "simultaneous processing of the multiple threads ...". The examiner disagrees. As can be seen from figure 4 of

Taylor, different threads connected in parallel (114, 116 and 118; and 126, 128 and 130) and pipelines (114-118, 120 and 126-130) for dynamically allocated or distributed among the threads.

Second, applicant argues that Taylor fails to teach that the same thread may apply different instruction set or process different types of samples in different clock cycles. The examiner also disagrees. Fig. 1 shows at different clock cycles, the threads 28-34 may apply different instruction set and process different data.

Third, applicant argues that the global state value of Rentschler is different than the claimed global state value. The examiner disagrees. The claims merely required "using a sample portion global state value" and there is no specific type of global state value that may be different from the global state value of Rentschler is claimed.

Therefore, all the arguments have been addressed and applicant's arguments are not deemed to be persuasive for the reasons set forth above.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kee M Tung whose telephone number is 571-272-7794. The examiner can normally be reached on Tuesday - Friday from 5:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kee M Tung
Primary Examiner
Art Unit 2676